Army Preparing for Mountainous, Battalion-Sized Test

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By Kris Osborn

The U.S. Army is planning a rigorous, large-scale Limited User Test, or LUT, of its Increment 1 Early Brigade Combat Team technologies at White Sands Missile Range, N.M., later this year. The evaluation will test robots, sensors, UAVs and a battlefield network in Afghan-like mountainous terrain.

Spanning a 35-kilometer area, the 2010 LUT will be more than five times larger than the 2009 LUT which tested the same technologies on the company level scale in the five-kilometer area known as Adobe Village.

"We had a company-sized test last year -- a very small footprint in Adobe Village. This year we have a battalion and we have added two more villages," said Maj. Gen. Keith Walker, director of the Army's Future Force Integration Directorate, Fort Bliss, Texas. "In 2011 we will spread the brigade a good 70 kilometers."

The test range for the 2010 LUT -- designed in part by Afghan war veterans -- is a large next-step in an incremental testing approach aimed at preparing the first unit to deploy to Afghanistan with Increment 1 technologies: the U.S. Army's 3rd brigade, 1st Armored Division.

"In 2012 - the first IBCT will deploy to Afghanistan and it will take with it the first capability package," said Walker.

The LUT will test sensors such as the Small Unmanned Ground Vehicle, or SUGV, robot in urban and non-urban environments such as 80,000-square foot buildings, caves and mountains.

"We've put a village up in the mountains for complex terrain and non-line-of-sight situations. We got to be able to pass information across the network at significant distances," said Jerry Tyree, Director of the Army Evaluation Task Force (AETF), Program Executive Office Integration. "The unit will be spread out. There will be a Forward Operating Base and a mountain village." As one of their objectives during the exercise, soldiers will have to raid, take over and sustain operations from the mountain village, Tyree said.

The 2010 LUT will not only add more space, people and terrain to the test; it will include more equipment and assets such as the Shadow and Raven UAS, said Paul Mehney, spokesman for PEO Integration. The idea is to place more stress on the battlefield network by increasing the ranges as well as the number of nodes, he said.

"The thrust of this is to make sure that the network with the radios will perform up to standard in these type of higher stress environments," said Mehney.

The Increment 1 technologies, which include the SUGV, Tactical and Urban Unattended Ground Sensors, Class 1 UAS and "networked" vehicles -- are designed to share voice, video and sensor data across the force in real time using high bandwidth waveforms such as Soldier Radio Waveform (SRW) and Wideband Networking Waveform (WNW).

"Right now the IBCT does not have a terrestrial-based digital network. We are offering it to them. All they do now is share position location information at the squad leader, platoon level. Now, we are giving them fusion of data and screens to project it - it is

robust, scalable and long range," said Col. John Wendel, program manager, Infantry Brigade Combat Team.

In early technical performance measures, SRW has demonstrated an ability to move sensor information at ranges up to 12 kilometers and WNW demonstrated an ability to connect nodes 20 miles apart; These ranges, which still need to be proven out in formal testing, represent an exponential increase over the previous year.

In fact, key aim of the expanded 2010 LUT will be to test the repairs and reliability "fixes" made as a result of lessons learned from the 2009 LUT.

"We have fixed everything. All of those repairs and corrective actions are built into the software, the hardware and the training plans to make sure we are doing things right and that we are not going to have repeats of failures.
We have also done accelerated destructive testing to find new failures that haven't occurred yet in the field and we have fixed those," said Wendel.

The LUT will also test Humvees and Mine Resistant Ambush Protected vehicles configured with Network Integration Kits (NIK) allowing them to link to the battlefield network, view sensors feeds and share information across the force; among other things, the NIKs include a Joint Tactical Radio Systems Ground Mobile Radio (JTRS GMR), an Integrated Computer System and a Blue Force Tracker display screen.

"By putting the NIK in Humvees and MRAPs, we're kind of doing a retrograde with what has already proven itself in combat. The NIK is the something we are testing as part an integration kit to pull all these sensory inputs from the other systems," said Col. Randy Lane, AETF commander.